SPECIFICATIONS FOR THE CONSTRUCTION OF

65 FT. MISSIONARY VESSEL

DESIGN #2020

FOR

PRESBYTERIAN NATIONAL MISSIONS

Jan 28 1954

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SPECIFICATIONS FOR THE CONSTRUCTION OF

65 FT. STEEL MISSION VESSEL

DESIGN #2020

FOR

PRESBYTERIAN NATIONAL MISSIONS

Edwin Monk, Naval Architect, Seattle, Washington. January, 1957

IN GENERAL

All details shown on the drawings or described in the specifications are intended to correspond, each with the other. In case any work is called for in one and not in the other, or vice versa, it shall be considered as being contained in both.

All workmanship, materials and fittings shall be of the best grade for the purpose intended, and the whole executed under the direction and to the satisfaction of the owner or his representative. Workmanship, materials and fittings which are not of standard quality will be rejected and must be replaced at the builder's expense. The vessel shall be constructed under cover and shall be insured by the builder in the interest of builder and owner as their interests may appear. A copy of the policy will be delivered to the Presbyterian National Missions.

MATERIALS

All materials and equipment for the completion of this boat except where otherwise noted shall be furnished by the builder. All lumber is to be sound, free from sap, pitch poskets or other imperfections that would make it unsuitable for the purpose intended, and all steel of manufacturer's Class A quality, and all plywood D.F.P. Ext. grade or better water-proof plywood. Where Harborite is specified Walton or other brands of equal quality may be used.

SHELL

Hull or shell plating shall be 1/4" and 5/16" mild steel. All welding throughout the vessel shall be in accordance with American Bureau of Shipping standards and specifications.

Shell plating when completed shall present a smooth appearance fair to the eye and free of hollows and bulges. Exterior welds shall be ground smooth.

STEM

Stem bar shall be from 3/4" x 4" flat bar and shall carry all the way to top of bulwarks. Shell plating shall be carried around stem bar to form barrel bow as shown.

KEEL

This shall form a keel condensor for both the main engines and shall be baffled for efficient utilization of cooling water.

FRAMES

Frames shall be fair and shall faithfully follow shape shown in lines drawing. Floors shall be cut from plate and butt welded to frames.

SHAFT LOGS

Shelby tubing or XX pipe will be used for shaft logs and a 1/2" plate will be welded to for'd end to receive heavy duty bronze stuffing boxes.

RUDDER

Rudder bearer will be S.K.F. roller or ball bearing packed in water-proof grease and rudder coupling will be fitted with 3/4" monel bolts. A drawing of rudder bearer will be supplied by architect. Pintle bearing shall be 2" Ryertex or equal, press fitted into skeg. Rudder stops shall be installed under deck to stop rudder at 40°. A kicking collar will be installed.

STEERING GEAR

This shall be cable and sprocket type as outlined in plans. Wheel shall be 36" diameter mahogany with king spoke marked. Tiller wire shall be 3/8" stainless steel 6 x 37 tiller cable, Hazard or equal, with breaking strength not less than 10,000#. Sheaves shall be 6" diameter or larger, fitted with Lubrite self lubricating bushings; a tightening devise for tiller line shall be provided.

Wheel sprockets shall be about 4" diameter and sprocket chain 3/4 pitch bronze providing about 5 turns from hard over to hard over. Quadrant shall be 26" radius keyed to rudder stock with rudder head squared for jury tiller. A screw type deck plate will be installed over rudder head and a jury tiller furnished; same to be made from about 1½ diameter pipe, to be galvanized.

ZINCS

There will be one of these each side of rudder, to be 1/2" x 6" x 8" and one each on struts.

HOUSE CONSTRUCTION

Corners shall be well rounded as shown. Thwartship plywood partitions shall be glued and well fastened to studding and to beams and floor strip and shall be 3/4" fir plywood.

Exterior doors shall be hard red Northern Philippine mahogany 1 3/8" thick and chapel doors shall be Dutch doors. House windows shall be set in Inland Rubber Company self-sealing rubber weather strip and one Kearfot window will be provided each side to drop in pocket as shown. Doors shall have mahogany jambs and exterior doors in pilot house and in chapel shall be weather-stripped using copper weather-stripping.

A 10-gauge non-magnetic stainless steel plate will be used in front of pilot house, this to extend at least 2 feet below compass; stiffener each side of compass shall be of non-magnetic material, also that on center L.

INTERIOR JOINER WORK

A painted finish is desired with Philippine mahogany trim such as drawer fronts, berth boards, doors and searails, locker doors, etc. Drawers shall be the lift-up pull-out self locking type and large interior doors 1 1/8" mahogany two-panel. Berth boards will be 3/4" mahogany without caps; wardrobes will be fitted with rods for hangers and tops fitted with searails.

INSULATION

Overhead in the entire deck house will be ceiled with 1/2"Acousti-Cellatex Cl or equal with washable finish. Between stiffeners in deck house will be placed 2" of blanket-type fibre glass insulation.

Between the beams in living quarters below, there will be placed 3/4" Acousti-Cellatex No. Cl washable paintable finish.

HAWSE PIPE

This will be 5" diameter pipe fitted with well rounded "Horse Collar" on outside of hull and a heavy rounded ring on deck.

ROLLING CHOCKS

These shall extend from frames 23 to 35 and shall have faired ends as is customary. The 3/4" rods will extend through the straighter part of the plate only (about 16').

WATER TIGHT DOORS

These shall be Heintz or equal, surplus or used doors if acceptable to architect may be used.

PORTLIGHTS

The portlights shall all be brass or bronze, Pacific Marine Supply or equal Fig. 5256 without cover (4 required). All the lights in hull shall be 9" diameter fixed lights.

FRESH WATER TANKS

These shall be located as shown and shall be fitted with 3/16" fore and aft swash plates. Tanks shall be fitted with bolted plate manholes. Filler pipes shall lead to deck and filler cap stenciled "Fresh Water". Vents shall be 3/4" and that for aft tank shall gooseneck up under deck and discharge on under side of guard. For'd tank shall gooseneck and discharge in basin drain. Supply shall lead from bottom of tanks and shall be 3/4" diameter.

FUEL TANKS

These shall total about 1,200 U. S. gallons in 3 tanks as shown. Filler caps shall be 2" diameter brass stenciled "Diesel".

Tanks shall vent under house overhang; all vents shall be not less than 1" diameter and shall be goosenecked and fitted with screens; vent pipes shall lead up between house studs.

CEILING

Boat shall be ceiled in living quarters and only where frames are exposed above berths, etc. with 1/4" Harborite; it will extend only to under side of ports and none will be installed in bathrooms.

FREEING PORTS & SCUPPERS

There shall be six freeing ports as shown, bottom of openings to be 1" above deck; these shall be fitted with brass or bronze hinges and provision made for lashing lightly in closed position. There will be two 1 1/4" scuppers each side to discharge in top of boot topping. A screen bar shall be placed across top opening and heavy rubber nose may be used for connecting to thru hull fitting. A 3/4" pipe scupper will be installed in aft corners

FREEING PORTS & SCUPPERS, CONT'D

of boat deck to discharge on main deck and from pilot house to boat deck.

LADDERS, STAIRS, AND HAND RAILS

Ladder from engine room to aft deck shall have diamond tread or equal treads with 1" pipe grab rail on side of house (inside).

All stair treads in living quarters and baggage room shall be covered with rubber stair tread cemented in place.

A 3/4" pipe hand rail will be installed each side of pilot house from door forward and on top of trunk; this shall be galvanized.

ENGINE ROOM

Floor will be 3/16" Diamond Plate or equal. A 1-5/8" thick wood work bench about 6 feet long will be installed where shown with a 3/4" plywood tool board back of same. On bench will be mounted a machinist vice Pacific Marine Supply No. 615 or equal (5" jaws).

PILOT HOUSE

Wheel shelf shall be 3/4" mahogany plywood with a 3/4" x 6" mahogany rim all around as shown; this will cover edge of plywood and protrude above shelf about 1" to form sea rail. Space under shelf will be open.

Chart table will have sea rails on aft and inboard side, and shall be 3/4" mahogany plywood with solid edges. There will be a full size chart drawer underneath about 3-1/2" deep inside and under it three small drawers about the same depth. Under this will be life jacket locker, and the small locker shown on portside will be fitted with two shelves. Floor will be covered with rubber tile cemented in place.

CHAPEL

The crew's mess table will be of 3/4" mahogany plywood with solid mahogany over exposed edges. It will have a 3/4" pipe leg threaded into a socket underneath.

GALLEY

Drainboard and work table surface will be covered with a good grade linoleum coved and carried up the side to underneath window sill. A detail will be furnished of galley cabinet work but it will be as indicated in plan.

GALLEY, CONT'D

Dish locker will be provided for the following: Service for 40--10 inch plates, 40--6 inch bowls; at least, 4 large serving dishes, 30 cups, no saucers, and 40 glasses.

Floor will be covered with a good grade of inlaid linoleum cemented in place and fitted with metal trim across the entrance.

SINKS

These shall be Roberge or equal fitted with basket strainers. They will be fitted up under the drainboard and a cover may be made to fill the surface flush. They shall discharge into one of the deck scupper pipes.

RANGE

This shall be an Olympic Y18LM oil burning range. Woodwork all around shall be insulated with 1/4" Transite with air space behind, Stove pipe shall be stainless steel and smoke head Breidert of same material. Over range will be fitted a stainless steel hood to vent thru mushroom vent as shown.

REFRIGERATOR AND DEEP FREEZE

Insulation shall be 4" of cork or equal and shall be carried out to the steel house sides as shown. The top half shall be a refrigerator and the bottom deep freeze. Lining shall be stainless steel backed with 3/8" plywood against insulation. Both compartments will be fitted with shelves.

Separate doors shall be provided for each compartment and hardware shall be regular brass or bronze refrigerator hardware.

Condenser unit will be Kelvinator or equal 1/4 h.p. 32-V. with dryer, two expansion valves, back pressure control valve and four freezer plates,

It will be a semi water cooled unit as assembled and installed by Western Refrigerator Company, Seattle, Wash., and which utilizes outside water cooling without water circulating pump.

BAGGAGE ROOM

A 1" drain will be provided in step to lead to sump below, Stairs to pilot house shall be wood with rubber treads. A 1" pipe hand rail will be installed alongside as shown.

Hatch to storage space will be raised about 1½" and fitted with a 3/4" Harborite plywood cover and a similar cover made for baggage hatch inside the deck box or trunk overhead.

STATEROOM NO. 1

Seat shall be held off wall sufficiently to accommodate radiator.

CAPTAIN'S ROOM

Desk shall be fitted with a drawer and over desk there shall be a book-case fitted with three shelves and with double doors, these to have glass panels

STATEROOM NO. 3

Seat locker lid shall be 3/4" mahogany plywood with solid mahogany exposed edges.

WOMEN'S DORMITORY

The starboard berths shall be fitted with drawers similar to those shown on the port side. That section of aft berths over V-drives shall be fitted with loose berth bottoms. Twelve clothes hooks shall be fitted in this area.

WOMEN'S BATH

Basin shall be about 16" x 18" vitrous china; this shall drain into sump and drain shall be 1 1/4" galvanized pipe or copper tubing. (See Plumbing Fixtures for Toilet). Install 2 towel bars, soap dish and toilet paper hanger.

Shelves with searails will be fitted in lockers. A steel medicine cabinet about 16"x18" with mirror will be installed.

MAIN STAIRWAY

This and all other wood stairs shall be fitted with rubber or composition treads. Frame No. 21 will be cut away at bottom of stairs so that first tread may come at edge of shell plate. This will be reinforced by a 1/2" x 4" doubler alongside frame. No shelf will be required in locker over tank. Stair railing shall be 3/4" mahogany plywood with mahogany cap about 1 1/4" x 2 1/4".

BATHROOM - FOR'D

Linen locker shall be fitted on outboard side. An enameled steel medicine cabinet about 12" x 16" with mirror will be installed adjacent to wash basin. Two chrome plated towel bars and one toilet paper holder and a soap dish will be installed. A 4" galvanized cowl vent with deck plate will be installed for ventilation with duct thru deck box.

Toilet shall be Wilcox Crittenden Skipper or equal; it shall discharge overboard in copper paint at W.L.. A seacock will be installed at discharge opening of this and all other through hull fittings below or at waterline.

Basin shall be 14" x 14" vitreous china corner basin, to discharge into shower discharge line.

SHOWER

This shall be equipped with hot and cold water, and shower head and valves shall be Kohler Fig. K-7030 or equal, with supply pipes on for'd side of bulkhead. These shall be fitted with faucets so as to serve washing machine located for'd of shower.

Floor shall be cemented and sloped to drain at lower inboard corner. It shall be covered with fibre glass which is to extend up all around about 6". (Use Epoxy resin). Shower curtain shall be installed by builder.

FLOOR COVERING

Pilot house and galley floors have been covered elsewhere. Chapel floor and that in living quarters will be primed with fibre glass primer and given 2 coats of floor paint. Engine room floor will be 3/16" diamond plate or equal.

MASTS AND RIGGING

These shall be clear fir. The dimensions of masts and boom are shown on plans; all mast bands and fittings shall be galvanized and rigging shall be galvanized cast steel wire. Forestay and shrouds 3/8" and turnbuckles 1/16" larger than wire. Boom shall be fitted with 1/2" Manila topping lift and double 4" blocks, boat hoist same. All blocks roller bushed. Two 8" cleats shall be attached to mast and vangs to boom shall be 1/2" with cleats (2) on covering board.

FLAGPOLES

These will be of spruce or Yellow cedar with hardwood trucks. Owner will furnish flags.

VENTILATION

All dead air spaces such as under berths, lockers, wardrobes, etc. shall be provided with screened openings for free circulation of air. The 8" cowl vents over engine room will be the turning type and galvanized. Living quarters below will be ventilated thru the space between house stiffeners as shown in drawing No. 4 & 5. Ventilation to space between boat deck beams will be provided by drilling thru 4 or 5 of the holes in the insulation under the beams each side.

HATCHES

The hatch over baggage compartment will be fitted with rubber gasket and it will be secured from below by two skylight fasteners Perko Fig. 770 or equal.

A portion of the trunk deck aft will be bolted in place for engine removal and an adequate gasket material provided for water tightness.

VISOR

This shall be of 14-gauge sheet with 3/8" rod stiffener around outer edge; it shall be supported by 10-gauge brackets.

DECKS, AFT TRUNK DECK AND BAGGAGE ROOM; FINISH

Remove all mill scale, grease and foreign matter by sandblast. Apply three coats of FARBERTITE to bare metal as per manufacturer's instructions. Material may be either brushed or sprayed. During application, dust FARBERTITE with sharp, dry sand. Allow each coat to dry until firm (Drying times will vary from two hours to overnight dependent upon humidity and temperature). Then sweep off excess sand.

Main Deck & For'd Deck - This is to be covered with Dura-Deck Mastic, to a thickness of not less than 3/16" thickness and as per manufacturer's instructions.

PAINTING & VARNISHING

All colors including stain shall be as selected or approved by owner. Paints shall all be standard recognized brands manufactured for the purpose intended. Exterior of hull will be sand blasted and coated with Galvacon applied as to manufacturer's recommendation, followed by one coat of International's Silver Primacon and two coats of International INTER-TROP anti-fouling paint below waterline. Above waterline it is to be given one coat International 225 Q.D. red lead followed by one coat undercoater and a final coat of finish, all to be International or equal.

House exterior will be treated in a similar manner.

Engine Room Space including Lazarette.

Sandblast to bright metal. Apply one coat of FARBERTITE to the entire surface. Then apply above the floor line only two coats of NOKORODE K KOTE (manufactured by Lion Oil Company) running at 1/8" wet film thickness per coat with a spreading rate of approximately 13 square feet per gallon. NOKORODE K KOTE can be sprayed with an 8 to 1 ratio pump, Grayco or equal, 1" I.D. fluid line and 3/8" orifice on the gun. Fluid pressure will vary from 80 lbs. to 100 lbs. dependent upon conditions. Do not proceed with second coat of K KOTE until the first coat is dry to the touch. This drying time will vary from overnight to 18 to 20 hours. For finish color after allowing three to four days' drying time, spray with aluminum paint.

Fore Peak & Under Floor Compartments including Engine Room & Lazarette

Sandblast. Apply two coats of FARBERTITE. Apply second coat after first coat is dry to the touch.

PAINTING, CONT'D

Living Quarters Below Deck.

To be treated in same manner as specified for engine room above floor. K-KOTE will be applied to underneath side decks but not under chapel floor. It will not be applied to bulkheads. Two coats of FARBERTITE will be applied to the steel work instead.

In baggage room NOKORODE K KOTE is to be applied to all areas above floor. All K-KOTE areas in living quarters and baggage room exposed to view are to be spray painted with Rainier POLY-COTE No. 911 or 912.

Water Tanks

These shall be sand blasted and then given two coats TERECOTE, (Apex Marine, Seattle), or equal as approved by architect.

Wood doors and all bright work including trim inside and exterior shall be given three coats of spar varnish; they shall first be stained and filled.

Interior painted wood work, above and below main deck and exterior painted trim covering board, etc. shall be given one coat of primer followed by at least two coats of flat and final coat of semi-gloss, sanding between each coat. Harborite shall be first given a coat of Woolsey's fibre glass ceiler.

Masts and boom shall be given two coats mast color.

Rudder, struts, and skeg shall be sandblasted and given two coats of Terocote; this to include rudder coupling. All sharp corners on the above to be ground off to about 1/8" radius or more.

Harborite deck is to be given one coat of Woolsey's fibre glass primer followed by two coats deck paint, last coat to be impregnated with a non-skid compound.

LAZARETTE

Engine room floor shall carry to stern and a 3/4" plywood shelf with sea rail shall extend all around perimiter.

MOTORS

These shall be new General Motors model 6-71 diesels fitted with hydraulic reverse and 1-1 Reduction gears, and with 12-volt starters and generators or they may be Cummins, P & H., Buda, or other standard diesel motors of equal power and of such dimensions as to fit satisfactorily in the space alloted. Builder will supply and completely install motors furnishing shafts, wheels, instrument panels and all other equipment. Motors will be fresh water cooled using keel for cooling as shown with surge tanks in engine room.

Starting batteries will be Fremont, Exide or equal heavy duty, starting batteries of 185 to 200 amphere hours capacity.

MOTORS, CONT'D

Motors will be secured to bed by machine bolts, and will be properly lined up.

Tail shafts shall be 2-1/2" diameter Monel with Coolidge, Doran or equal, heavy duty bronze stuffing boxes. Stern bearings will be Goodrich Cutless or equal.

Exhausts shall be wet and shall be out thru stern.

Exhaust pipes shall be fitted with a section of rubber exhaust hose, and silencers shall be 4" Maxim or equal. Each motor will be fitted with a 1/2" Jabsco pump for cooling exhaust and piping for this shall be copper tubing. A 2" iron pipe shall connect with sea cock shown for'd of bulkhead Fr. 35 and to this pipe will be connected the supply line for the Jabsco pumps and for the auxiliary diesel if water cooled and to wash down pump.

CONTROLS

These shall be Mathers, Morse, or equal two-lever type; starting buttons and motor stops will be in pilot house.

AUXILIARY DIESEL

This shall be Lister Blackstone Model LD2 or equal, an air-cooled two cylinder diesel 7 h.p. fitted with electric starting.

It will be direct connected to a 3 K.W. 32-volt D.C. generator and belt driven 110 volt A.C. generator.

Bilge pump will also be belt driven by this motor through a ball bearing clutch.

Exhaust will be out through side of hull; it will be goosenecked to prevent water entering motor and will be equipped with a section of flexible metal exhaust hose. The silencer will be a "Service" or equal.

EXHAUST ALARMS

On the exhaust pipes on both the main engines there will be placed a Hudson thermostat alarm (price $10.00) to be connected with a buzzer or bell adjacent to wheel.

MOTOR ALARM

Penswitch or Detroit Lubricating Company high temperature low pressure alarms will be installed with 4" bell in pilot house.

PROPELLORS

These shall be about 36" diameter Olympic, Coolidge or equal cast mang. bronze; exact diameter and pitch will be determined by architect.

FUEL PIPING

Fuel piping shall be 1/2" copper tubing; two lines will run forward, one to connect to the 2 double bottom tanks and the other to wing tank with manifold on aft engine room bulkhead and so connected that either or both motors may be run from either line. A Duplex A.C. fuel strainer shall be installed in each line to motor (2) and the fuel return from motors shall be connected to all 3 tanks with valve at each. It shall be 3/8" copper tubing. Supply to auxiliary and to stove shall be from the above manifold.

WIRING AND SWITCHBOARD

There will be two voltages 32 D.C. and 110 A.C. The former will be provided by a 2 K.W. 32-V. generator to be belt driven off one of the main engines and a 3 K.W. on the auxiliary diesel. The 110 voltage will be from the auxiliary only.

All wiring will be basket weave navy type and the entire system will be installed to comply with A.I.E.E. recommended practice for electrical installations on shipboard.

The switchboard for 32-V. will be open-faced mounted on a hinged Ebony asbestos or bakelite board, about 20" x 24". There will be 12 circuits which with wire sizes will be about as follows:

1. Windlass - - - - - - - - - - - - - - - - No. 4-2
2. Navigation lights & searchlight - - - - -14-2
3. Stove, furnace & heating circ. pump - - 12-2
4. Radio Telephone - - - - - - - - - - - - - 8-2
5. Depth Finder - - - - - - - - - - - - - 10-2
6. Refrigerator & Deep Freeze - - - - - - - 12-2
7. Automatic Pilot & Air Compressor - - - - 10-2
8. Navigation Lights & Searchlight - - - - 14-2
9. Lighting - - - 14-2
10. Lighting - - - - - - - - - - - - - - 14-2
11. Spare - - - - - - - - - - - - - - - 14-2
12. Spare

WIRING AND SWITCHBOARD, CONT'D

Switches will be knife-type and fused and the board will be equipped with voltmeter, ammeter, and if the generators are not so equipped, a reverse current relay will also be incorporated. The switches will all have name plates.

The 110-V. panel will be a 3-circuit enclosed panel Square D or equal, and there will be two circuits as follows:

One circuit will run to baggage room for washing machine, etc. with outlet in each dormitory. One circuit to pilot house with an outlet in galley in pilot house and 2 in chapel. This line will run back of baseboard. There will also be an outlet in the engine room.

These two circuits will be No. 14-2.

WINDLASS

This will be an Ideal Windlass Company, Model GHWSC or equal fitted with wildcat for 7/16" BBB chain and with 1 h.p. 32-volt D.C. motor.

LIGHTING

Fixtures shall be Pacific Marine Supply or equal standard marine lighting fixtures and except for engine room, all are to be fitted with pull switches, location of lights is shown in plan; switches shall be provided for engine room lights at boath entrances, also two for chapel and one for pilot house as shown. Two 32-V. plugs for trouble light or accessories will be installed in engine room. Berth lights Perko Fig. 217.

BATTERY, GENERAL SERVICE

This shall be 32-Volt Edison No. C8 or A12H - 25 cells, and shall be used for lighting and general service. It shall be installed in a wood box where shown in Lazarette. A 3/4" plywood cover will be fitted over box.

GROUND

The electrical system including radio telephone shall be grounded to a copper bar on outside of hull. This bar shall be a 3/4 x 3' heavy wall copper tube closed at each end and thru bolted using Monel bolts; an equivalent approved mass of copper may be used. No electrical current shall be grounded to hull.

FRESH WATER UNIT

This will be Crowell or equal and will be located in engine room.

HEATING & HOT WATER

This shall be provided by a National U.S. hot water boiler No. 3-12.U with 32 V. burner unit complete for diesel fuel, with flush jacket, relief valve, M. H. Controls or equal. There will also be the following:

1 #100 - 1" B&G horizontal booster

1 BA1" B&G Flow control valve

1 8-gal. 9 x 32 B&G Compression tank

1 #3 B&G Brass dual unit, connected to pressure system of vessel

1 #A3 - 1/2" B&G relief valve

"Or equal" applies to all of the above.

Convector radiators shall be Trane type W-wall cabinet of size and location shown on plans. There will be #17SR Air vents on all radiators and #7 vents on hi points of lines or equal.

This will be a one pipe system and piping will be copper tubing with sweat fittings, 1" main line. At forward end it will loop around baggage room under the bilge stringer to provide heat in this space.

Domestic hot water will be provided by a built-in heater in the heating boiler connected to a galvanized hot water tank of about 20 gallons.

PIPING, WATER

This shall all be copper tubing. Fresh water piping from pump to fixtures shall be 1/2". Both hot and cold water will be supplied to basins, shower and sink.

BILGE, FIRE, WASH DOWN PUMP

This will be a No. 4 M U self-priming Barnes pump 1½" x 1½" to be belt driven from the auxiliary diesel. It will be fitted with a suitable ball-bearing clutch.

Pump will be connected to bilge manifold and separately to the sea suction (See Par. 4, P. 11).

FIRE & WASHDOWN PIPING

There will be a 1 1/4" line run to outboard side of the port deckbox; this will be fitted with hose bib for 1" hose. Builder will supply 50' 1" I.D. rubber hose and nozzle for same.

BILGE PIPING

There will be 5 sumps as shown and bilge piping shall be 1-1/4" galvanized pipe. Sumps will be fitted with foot valves and strainers. Only two lines need run forward of sump No. 4 as one line will serve No. 1 and 2 with valves at each sump. Discharge shall be above W.L. A drawing of bilge piping will be furnished by architect.

STOVE OIL SUPPLY

This shall come from fuel manifold and shall be 3/8" copper tubing. Pressure shall be supplied by a 32-Volt Autopulse or equal automatic pressure pump. A Kuno or equal strainer will be installed in line with shut-off valve at range and at manifold.

SHOWER SUMP PUMP & TANK

Pump will be a Sudbury automatic bilge pump with float switch. It will be installed under aft cabin floor in shower sump tank. It shall discharge in boot top above waterline; all basins and the shower will be connected to the sump.

GROUND TACKLE

Builder will equip boat with a 85# Danforth anchor to which will be shackled 400 feet 7/16" galvanized BBB close link chain.

CLEATS & MOORING RINGS

Location and size of cleats are shown on plan; they shall be heavy type galvanized fittings. Mooring rings (4) shall have 4"x7" opening; they shall be of sufficient depth and of such design as to minimize wear on lines. A 3/4", pipe or rod, bar about 8" long shall be placed through alternate bulwark stanchions for fender cleats.

DECK BOXES

These shall be fitted with drains or scuppers and hinged metal covers; they shall have rounded corners.

AUTOMATIC PILOT

This will be a Bendix No. 125 Photo Electric pilot -=----------, or equal, installed under wheel shelf and a separate sprocket will be provided on wheel shaft for same.

COMPASS

This shall be Constellation Fig. 6313, 6" or equal, provided with binnacle light. Builder shall have it adjusted.

DEPTH SOUNDER

Builder will install a Bendix No.DI3 Depth Recorder or equal.

RADIO TELEPHONE

This shall be Northern Electric 32-volt Model 520-C or equal 5-channel 100-watt, installed where shown in pilot house. It shall be fitted with a Bay Marine ship antenna secured to foremast on for'd side of same.

WHISTLE

Whistle shall be Cunningham Air Whistle No. 2 B.S. mounted on foremast with whistle pull under it in pilot house.

WINDSHIELD WIPERS

There shall be three of these, one on center window and one each side; these shall be air operated, Trico or equal, heavy duty truck type with non-corrosive blades and arms. They shall all be controlled by one control at wheel.

BEDDING AND LINEN

This will be furnished by owner.

BOATS

Owner will supply one 10-ft. dinghy, one 14-ft. outboard boat with covers. Builder will install these in proper chocks on boat deck and equip chocks with lashing rings. He will also provide lifting rings in boats and a galvanized wire sling for each. Lower block on lifting fall will be fitted with hook.

Builder will provide brackets each side of mast for stowing two outboards. Outboard fuel will be stowed in deck boxes, 3 Jeep cans, provided by builder.

FIRE EXTINGUISHERS

Contractor shall provide one 2-1/2 gallons foamite in engine room, one 2-lb. C-O two or equal hand extinguisher in galley, engine room, dormitories and baggage compartment, all to be secured in place.

HARDWARE

All locks, catches, etc., shall be standard brass or bronze marine hardware of substantial construction.

MATTRESSES

These will be supplied by builder and will be 4" foam rubber or 6" spring filled, Jorgenson or equal. Standard mattress may be used if they can

MATTRESSES, CONT'D

Be found to fit and are no thicker than 6".

SOUNDING RODS

Sounding rods for fuel and freshwater tanks (2 rods) will be supplied by builder. These are to be marked in gallons and shall be Alaska cedar shellaced.

SEARCHLIGHT

This shall be a 32-volt cabin control Perkins Marine Lamp Company Fig. 306, 8" diameter or equal brass fitted with canvas cover.

BELL

Bell shall be 8" standard ship's bell mounted on mullion forward of pilot house.

BOARDING LADDER

A mahogany (painted) boarding ladder will be made to fit either side of boat. It will hook over lugs welded to hull above the main guard. A detail of this will be furnished by architect.

RAIL GATE

A section of the bulwarks each side of boat will be made to lift out for this purpose with 1/4" galvanized chain at rail opening to hook into eye at one end.

CURTAIN RODS

Curtains will be supplied by owner but builder will furnish and install curtain rods. These shall be 1/2" diameter brass hard drawn tubing with mahogany bracket supports. Rods shall be placed at all windows in chapel and galley.

PLUMBING FIXTURES

Sinks will be fitted with a swing faucet and basket strainer. Basins shall be Kohler or equal Vitreous china, the for'd corner basin not less than 14" x 14" and aft basin 18" x 16", both are to be fitted with P traps and are to discharge into shower sump tank. All the above will be supplied with hot and cold water and chrome plated fittings.

Toilets will be Sands Skipper hand closets with white seat and cover. They will discharge in copper paint at the waterline and will be fitted with seacocks.

The aft toilet discharge will be goosenecked to about 18" above waterline. The gooseneck may be made up of a 2"long radius welding U bend (Turntube or equal) and will be fitted with siphon breaker. Heavy rubber hose may be used for connections.

BALLAST

This shall be in the form of concrete, and shall be placed where shown under engine room and aft dormitory. The architect requests he be notified before ballast is placed in boat as a change in other weights may effect its location.

AIR COMPRESSOR

This shall be Quincy Model FX2, a self contained unit with 1/3 h.p. 32-volt motor mounted on a 10-gal. tank and fitted with automatic pressure switch. It shall be mounted where shown in baggage room. Line to whistle shall be 3/8" O.D. copper tubing. A pressure reducing valve shall be placed in the line to swipes.

GALLEY EQUIPMENT

Pots and pans, dishes and other similar equipment will be furnished by owner.

LIFE RING

A life ring, Pacific Marine Supply Fig. 14, will be installed on each side of pilot house or where directed; it shall hang on 3 flat bar hooks, brass.

MOORING LINES

Builder will supply three 40-ft. 3/4" diameter Manila mooring lines with an eye spliced in one end.

LIFE PRESERVERS

Builder shall furnish 40 approved life preservers.

FURNISHED BY OWNER

In consideration of the purpose for which this vessel will be used the owner reserves the right to supply any of the equipment or material used in this boat. The builder to credit the owner for same to the amount these items would have cost the builder. It is realized that a time limit must be placed on this reservation, same to be agreed upon between the successful bidder and the owner.

Owner will supply bedding, dishes, culinary utensils, tableware, mop, broom.

CHANGES AND EXTRAS

These must be confirmed in writing by owner or his representative before work is started on same.

LETTERING AND OFFICIAL NUMBER

Name and Hailing Port shall be painted on stern and name on each side at bow; builder will apply for measurement and apply official number on main beam.

CLEANING

Vessel shall be delivered free of chips and shavings and thoroughly clean.

INSURANCE

Contractor shall insure vessel with Builder's Risk Insurance in the interest of builder and owner as their interests may appear, and keep same insured until acceptance of boat by owner.

TRIAL TRIP & DELIVERY

The boat will be given a satisfactory trial trip by builder of not less than four hours duration during which all machinery will be tried out and equipment inspected. Any defects or deficiencies will be made good by the builder without additional cost to owner.

Boat will be delivered to owner at builder's plant if same is located on Puget Sound and to Seattle, if not.

OPENING OF BIDS

Bids will be opened in the office of the Naval Architect at 11 A.M., Monday, February 11, 1957.

ADDENDA TO SPECIFICATIONS

DES.NO.2020

WINDLASS

This shall be changed to the Ideal Model G2HW which is equipped with two horizontal wildcats.

GROUND TACKLE

There will be one 85# and one 65# Danforth anchor, The former fitted with 400 ft. of 7/16" BBB close link galv. chain and the latter with 300 ft. of the same.

HAWSE PIPE

There will be two hawse pipes to accomodate the two anchors. They will be the same size etc. as specified on page 3 and will be of sufficient length as to accomodate the anchors when stowed. Anchor chains will be dead ended.

CHAIN LOCKER AND ADDITIONAL BALLAST

The chain locker will be divided fore and aft by a 1 5/8" pine or fir partition and a floor will be placed on top of the 2 1/2 x 2 1/2" stringer shown in plan. This shall be 1 5/8" fir or pine with 1/4" spacing between boards for drainage.

Builder will furnish 1000# of cast iron pigs of about 50# each and coated with Farbertite or equal to prevent rusting. This weight will be stowed aft as directed to counteract the added weight of anchors & chain.

RADIO TELEPHONE

This shall be equipped with optional crystal control on receiver.

GASOLINE STORAGE & LUBE OIL TANK

In lieu of one of the deck boxes over engine room trunk, there will be placed a separate 50 gal. gas. tank. This shall be of 12 ga. sheet galv. after welding and well secured in place. It will be fitted with a spring loaded cock to which can be attached a 1/2" hose. Tank will be vented up aft side of house with 3/8" copper tubing which will be goosenecked to discharge under house overhang and will be screened. Tank will be labeled "gasoline" in letters 2" high on three sides and top.

On for'd side of bh'd frame 35, on stbd side and under side deck and extending aft to frame 36, will be built in 60 gal. lube oil tank, using

GAS. STORAGE & LUBE OIL TANK (cont)

bh'd, deck & hull as part of tank. Fill pipe will be a 2" pipe about 8" high close to bulwarks and fitted with brass pipe cap. Vent will lead up inside of engine trunk, be goosenecked and discharge outside thru trunk. Vent opening will be screened. Hot water tank will be moved aft to accomodate lube oil tank.

Supply from tank shall be a 1 1/4" spring loaded faucet or cock.

STAIRWAY

A 3/4" plywood sheet will be fitted over stair well and flush with floor of chapel in order that this space may be used for seating when needed. The post shown at inboard for'd corner will remain but railing will run same height on inboard side and front, about 3 ft.

FLOOR COVERING

Chapel floor and floor in living quarters below shall be covered with good quality inlaid linoleum, "Armstrong" or equal, cemented in place. All hatch openings will be bound by a non-corrosive metal binding and pattern of linoleum shall be as approved by owner.

MAST

The mast bands shall be so constructed that the boom may be attached to either for'd or aft side of mast.

MOORING RINGS

There shall be one each side of each cleat (four additional), They shall be the same size etc. as previously specified and in addition to this, there shall be a ring at center of stern.

LIGHTS

Just for'd of the doors to chapel and at for'd end of pilot house there shall be placed an additional deck light with switches inside. Lights shall be similar to short type Pacific Marine Fig. 402 with 60 Watt globe.

WATER TANK

The strb'd wing fuel tank shall be changed to water. Fuel cap. will now total about 1150 gal.

INSULATION

Living quarters below deck, including bathrooms but not baggage room, shall be additionally insulated as per dwg.(revised) No.2020 and dated

INSULATION(cont)

6/11-57. The 1/4" Harborite shall be carried up the inboard edge of bracket between the portlights.

AFT TOILET

This shall be placed on a raised platform as shown, this however should not add to the cost of installation.

CHANGES IN ACCOMODATIONS

Stateroom No.1 will be eliminated as such and will become part of the dorm. The berths will be widened to same as on stb'd side. The wardrobe will be retained. A desk will be built in S.R. NO.3 in place of seat locker and will be similar to that in S.R.No.2, including bookcase.

Wardrobe at aft end of men's dorm will be eliminated and step from pilot house to chapel will be moved inboard about three ft. and railing changed to suit.

Two chart drawers instead of one, will be built under chart table.

Outboard brackets aft of mast will be eliminated. Hatch in laundry floor will be moved inboard, out from under stairs. It will be flush. Under stairs will be built shelves with high sea rails. Laundry floor will be painted with non-skid paint and not sanded. Galley sink faucet shall be such as to take a hose for rinsing dishes.

Deck box on port side aft to be so constructed as to provide an upright section on outboard side to hang washdown hose in an enclosed locker. Some of the above should constitute a credit.

TOW BITT

This shall be eliminated and in its stead, the mast will consist of a 5" dia. pipe carried from a support at or close to Ladie's dorm floor level to top of house. The wood mast will socket into this pipe. A 1/4" doubler will be welded to trunk deck. Cavel Pipe will be 1½".

The present w.t.door from ladies dorm will be moved to stb'd and stairs designed to fit.

The present tow bitt will be eliminated and the engine room entrance moved from portside to center aft.

The present plans will be changed to show all the changes and a new set furnished the builder. The wattage on the 110V gen. was inadvertantly omitted in the specifications. It shall be about 1 KW.